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IS 3741-2 (1990): Medical Glass Instruments - Sedimentation Tubes, Part 2: Wintrobe Tube [MHD 12: Hospital Equipment]

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Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”





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*Indian Standard*

MEDICAL GLASS INSTRUMENTS—  
SEDIMENTATION TUBES—SPECIFICATION

PART 2 WINTROBE TUBE

( Second Revision )

भारतीय मानक

चिकित्सीय कांच उपकरण — अवक्षेपण ट्यूब — विशिष्ट

भाग 2 विट्रोब ट्यूब

( दूसरा पुनरीक्षण )

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BUREAU OF INDIAN STANDARDS  
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## **FOREWORD**

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards on 20 March 1990, after the draft finalized by the Medical Instruments and Disposables Sectional Committee had been approved by the Medical Equipment & Hospital Planning Division Council.

This Indian Standard was first published in 1966 and revised in 1980. In this second revision, the standard has been splitted in two parts:

**Part 1 Westergren tube**

**Part 2 Wintrobe tube**

This Part 2 deals with wintrobe tubes used to determine the erythrocyte sedimentation rate (ESR) in human blood containing an anti-coagulant by macro method. In this revision, modifications have been incorporated in the requirements of material, workmanship and finish, and scale graduations.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

## Indian Standard

# MEDICAL GLASS INSTRUMENTS— SEDIMENTATION TUBES—SPECIFICATION

## PART 2 WINTROBE TUBE

### *(Second Revision)*

#### **1 SCOPE**

**1.1** This standard specifies requirements for Wintrobe tubes used to determine the sedimentation rate of erythrocytes in human blood containing an anti-coagulant by macro method.

#### **2 MATERIAL**

**2.1** The Wintrobe tube shall be made from transparent glass (other than soda glass) tubing, free from visible defects and reasonably free from internal stress. The glass shall pass alkalinity test prescribed in IS 2303 : 1963 'Methods of grading glass for alkalinity'. It may also be made from functionally compatible transparent plastics suitable for process to be used for sterilization and free from defects liable to make it unfit for correct use.

#### **3 SHAPE AND DIMENSIONS**

**3.1** The shape and dimensions of Wintrobe tubes shall be as shown in Fig. 1.

#### **4 WORKMANSHIP AND FINISH**

**4.1** The Wintrobe tubes shall be well annealed, free from bubbles and as free as possible from striae, stones and other visible defects. The top of the tube shall be slightly rounded. It shall be ground smooth and square with the axis of the tube.

**4.2** The lower end of the tube shall be closed with internally flat bottom.

**4.3** The specified bore of the tube shall be maintained throughout the length.

#### **5 SCALE GRADUATION AND NUMBERING**

##### **5.1 Scale**

**5.1.1** The Wintrobe tubes shall be provided

with a scale of 100 mm length graduated in mm starting from the base of the lumen of the tube.

**5.1.2** The scale shall be numbered from 0 to 90 downward and from 10 to 100 upward, the two numberings being on either side of the scale shown in Fig. 1.

**5.1.3** The graduation lines and numbering shall be clear, easy to distinguish, permanent and of uniform size. The graduation lines shall be of uniform thickness not exceeding 0.3 mm.

**5.1.4** The numbering of the graduation lines and their lengths shall be as follows:

*Long Graduation Lines* — 0 mm, 10 mm, 20 mm, etc. The length of lines to be at least 6 mm.

*Medium Graduation Lines* — 5 mm, 15 mm, 25 mm, etc. The length of lines to be at least 4 mm.

*Short Graduation Lines* — The length of lines to be at least 2.5 mm.

The numbering shall be close to but shall not touch its corresponding lines.

#### **6 MARKING**

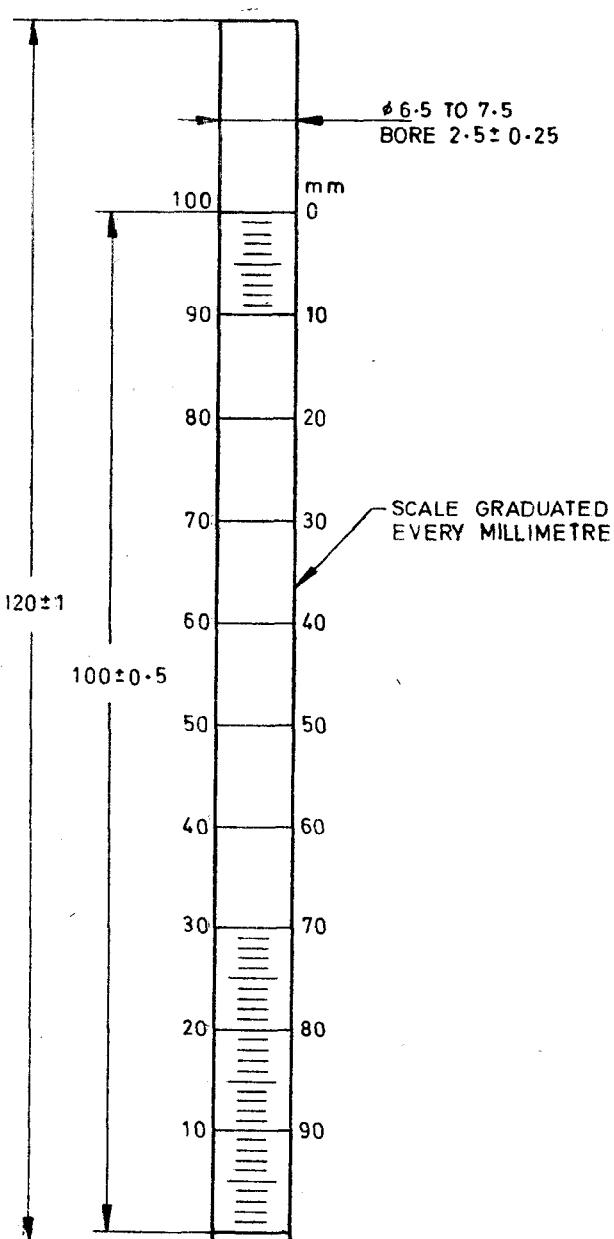
**6.1** Each Wintrobe tube shall be legibly and indelibly marked with the following information:

a) Indication of the source of manufacture, and

b) Unit 'mm' placed close to the top most numbering.

#### **7 PACKING**

**7.1** The Wintrobe tubes shall be packed as required by the user.



All dimensions in millimetres.

FIG. 1 WINTROBE TUBE

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